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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,296	01/29/2001	Andrew Kevin McParland	50060-042	8376

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EXAMINER	
KNEPPER, DAVID D	
ART UNIT	**PAPER NUMBER**
2626	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/770,296	MCPARLAND, ANDREW KEVIN	
	Examiner	Art Unit	
	David D. Knepper	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 Jan 2005, 29 Aug 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's correspondence filed on 29 August 2005 January 2001 has been received and considered. Claims 1-36 are pending.

The applicant has alleged that this amendment was originally filed as a preliminary amendment on 20 January 2001. Therefore, this action will be Non-Final to address these claims. It appears that the amendment in question was not scanned into the record so the post card receipt showing a Preliminary Amendment is accepted as proof that the amendment in question was filed in 2001.,

Title

2. The title is objected to because the words "Method for" are unnecessary and deleting them will reduce the length of the title closer to the preferred length of 2-7 words (MPEP 606).

Declaration

3. The Declaration of the Disclosure is accepted. A complete copy of the Declaration was provided which does not have words cut off. The signature appears to be "A. McParland" and is accepted as the actual signature of "Andrew Kevin MCPARLAND".

Drawings

4. The drawings are objected to because they fail to illustrate the insertion of digital data into an audio digital data stream. Figures 7 and 8 are not properly labeled with reference numbers for proper reference from the specification.

Figure 1 has reference numerals but does not appear to be useful for describing the invention insofar as it fails to show anything which will perform the claimed invention:

"inserting auxiliary digital data". This figure shows synthesizing sub-band coded data into PCM coded data and then encodes the PCM data. Should Figure 1 be labeled as "prior art"?

Figure 7 shows "insertion and extraction of the synchronization signal" block 700, page 16. The specification here indicates: "This sequence (700 of fig. 7) should be inserted into an appropriate subband before the synthesis filter (702 of Fig. 7)." This contradicts various arguments made by the applicant. Therefore, this figure should be removed.

Correction is required.

Priority Claims

5. The applicant(s) should check their filing receipts and/or the Patent Application Information Retrieval (PAIR) system for the acknowledgment of their **domestic** priority or benefit claims (if any) under 35 USC 119(e), 120 or 121 (37 CFR 1.78).

Claims

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 1-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Parts of the specification indicate that it is best to put the auxiliary information into low sub-bands (i.e. – page 13) but others indicate the use of high sub-bands (i.e. - pages 16-17). To further prosecution it is assumed that doing it either way is obvious as suggested by prior art.

The applicant's claim language and arguments in support of the claims contradict the disclosure and drawings. On page 7 of applicant's arguments (19 Jan 2005), the applicant argues "the invention concerns the identification of portions of a main signal into which data can advantageously be inserted to cause substantially no impairment of that main signal" and goes on to refer to pages 10 and 11 of the specification. However, the claims require a main digital data stream "which main digital data stream is subsequently to be coded..." This is subsequently argued by the applicant as differentiating a "main digital data stream" (uncoded data stream) from a "coded" data stream. Contrary to the claims, the specification requires the data to be in subband coded samples and page 9 of the specification specifies: "Data could be inserted when decoding an MPEG audio bitstream..." and on pages 10 and 11 teach "...value is valid for a particular subband and scalefactor" (page 10, line 14). Thus, the specification requires the insertion of auxiliary data into a subband coded bitstream while the applicant argues that the claims are directed towards inserting auxiliary data into an uncoded bitstream.

Figure 7 shows "insertion and extraction of the synchronization signal" block 700, page 16. The specification here indicates: "This sequence (700 of fig. 7) should be inserted into an appropriate subband before the synthesis filter (702 of Fig. 7)." However, the necessary subband and synthesis filter are not present in the claims. While this would normally be viewed as breadth of claim, the applicant's arguments contradict these requirements by the specification.

Digital data of various types are common in computer related inventions. The broad claims (i.e. – claim 1) are not limited to any particular type of data. However, other dependent claims (i.e. – claim 2) require "audio data to be coded". Audio data is the only type of data mentioned in the specification and this is commensurate with the title. However, uncoded audio data would be analog, not digital, in its natural form. Any digital representation of audio data would require some form of coding even if it is a simple analog-to-digital (A/D) conversion. Pulse Code Modulation (PCM) requires further coding beyond A/D and, in fact, there are different forms of PCM that achieve various levels of compression. Therefore, it is important for the specification and claims to clearly distinguish between types of data and the types of coding. It is similarly important to clearly define how to convert between these types of data as well as the particular method and/or apparatus elements that will further analyze a particular portion of the data to determine where an insertion will occur as well as what will be inserted. The current specification fails to define these elements in a convincing manner.

8. Claims 1-36 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The alternative language in lines 2-4 of the claims could be interpreted as differentiating between uncoded "main digital data stream" and "subsequently coded data stream". However, the language in lines 8-10 of claim 1 "inserting data from the auxiliary data stream in the or each component..." should be interpreted in light of the disclosure to require subband components which must be identified for insertion of the auxiliary data. See comments above regarding

pages 9-11 of the specification and also figure 7 and the description on page 16 of the specification which require subbands "defined by the MPEG standard... This sequence (700 of fig. 7) should be inserted into an appropriate subband before the synthesis filter (702 of Fig. 7)." Thus, the specification requires MPEG coding to define the subbands which will be analyzed to identify where to insert the auxiliary data. Not only is coding required but the specification teaches here that the insertion must be done before synthesis indicating that insertion may not be done to an uncoded (synthesized) signal.

Therefore, significant confusion arises resulting from alternative language in the claims in combination with the applicant's arguments that support an interpretation that conflicts with the specification.

In order to further prosecution, the claims will be interpreted in light of the specification and figure 7 to require insertion of auxiliary data into a coded signal. This seems to be the only reasonable course of action for the Examiner because no teaching in the specification or drawings could be found to support insertion of auxiliary data into an uncoded signal. Thus, it is not possible to perform a search on something that is not disclosed because there is no way to gauge the relevancy of any art uncovered.

It would appear that attempts to modify the specification to support the insertion of auxiliary data into an uncoded signal would be new matter and is therefore prohibited in the current specification. Even if a different coding scheme (other than MPEG) could be supported, every figure requires some form of subband coded signal. Figures 2-4 and 6 have the X-axis labeled as "subband", Figure 5 has "ID sequence (1 subband)" and figure 8 indicates that these steps, although not labeled, are all based on measurements taken from subband coded data. In

fact, no uncoded digital data appears to be disclosed. Even PCM is a form of digital coding having a number of well known variations.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-11, 13, 17-20, 19-28, and 30-35 are rejected under 35 U.S.C. § 103 as being unpatentable over Spille (5,712,920).

As per claims 1, 13, 17-20, 23, 30: "inserting auxiliary digital data" is taught by Spille's transmission and/or storage and decoding of an auxiliary signal:

"identifying at least one component of the main digital data stream which will make substantially no perceptible contribution to the coded data stream and inserting data from the auxiliary data stream in the... component" is suggested by his teaching The auxiliary signal is transmitted in one of the frequency bands at a level much lower than the level of the audio signal (abstract).

It is noted that Spille does not explicitly use the terminology "one component ... which will make substantially no perceptible contribution". However, he teaches that utilizing the

MPEG audio standard, the bit stream may be modified with auxiliary data which can accommodate data of all types, and can be place in any subband selected by analysis to produce a virtually inaudible data channel (col. 1, lines 31-59). It would have been obvious for a person having ordinary skill in the pertinent art, at the time the invention was made, to place auxiliary information of any type into part of the bit stream that would otherwise present substantially no contribution to the coded data" because Spille teaches that his auxiliary data may be placed in any subband such that it will be inaudible. Thus, if the data stream is audio, then the inaudible nature of Spille's modification will be an obvious equivalent to the claimed "substantially no perceptible contribution".

Claims 2, 3, 4, 7, 8, 9, 10, 19, 21, 22, 24, 25, 26, 27, 33: At a level "below the quantization noise floor" or "below the level of estimated quantization noise" simply defines according standard MPEG processing that the signal at that level will be inaudible which is what Spille teaches regarding the level of the auxiliary signal (see above and col. 2, lines 16-29). It is noted that MPEG coding is a form of quantization which requires frequency analysis; the resulting digital signal is the quantization of the analog signal (audio), see col. 1, lines 31-41). MPEG coding is performed for the purpose of allowing hi quality reproduction of the audio signal (col. 2, line 19 and fig. 2).

Claims 5, 11, 28, 31, 35: "Adjusting or selecting at least one parameter or decision associated with said coding in dependence on data from the auxiliary data stream" is taught by Spille in col. 2, lines 1-12: This auxiliary-data transmission channel can therefore be used for identification or control purposes of all types... The various examples by Spille would clearly improve "consistency with a previous coding of the main data stream."

Claim 6, 34: "Auxiliary data is extracted prior to or during said coding" would read upon determining what the auxiliary data will represent as noted in claim 5 above. This would inherently be required before the data is inserted. Thus, it would have to take place before or during the coding process so it can be inserted properly.

Claim 32: Spille teaches in col. 1, lines 50-55 that his auxiliary data channel with a capacity of 48,000 samples/s/32 subbands*16bits/subband=24kbit/s... Thus, comparing the capacity taught by Spille is more than adequate to the limitation "comprises at least 4 words".

Claims 23, 24: The subbands of MPEG represent frequencies that are carefully analyzed utilizing psychoacoustic masking thresholds. These are based upon masking properties of the human ear analyzed in accordance with known relationships between frequency, bandwidth and amplitudes of competing sounds to include the relative spacing of subbands given frequency and bandwidth.

11. Claims 11, 12, 14-16, 28, 29, 30, 31, 32 and 36 are rejected under 35 U.S.C. § 103 as being unpatentable over Spille (5,712,920) in view of Ten Kate ("A New Surround-Stereo-Surround coding Technique").

Claims 11, 12, 14, 16, 29, 30, 36: It is noted that Spille remains silent regarding "synchronization". However, Ten Kate teaches details for adding auxiliary information inaudibly (bottom rt, pg 376 and fig. 1, pg 377) to audio signals which is the same goal as Spille. Ten Kate teaches in the left column on page 380 that synchronization is required at the receiver end to more accurately reconstruct the signal. Thus, it would have been obvious to provide auxiliary information to assist proper synchronization because Spille teaches that auxiliary

information can accommodate data of all types (col. 1, lines 49-50) and Ten Kate teaches that it would be useful to have accurate synchronization to improve proper decoding of a transmitted, coded signal.

Claim 15, 32: Spille teaches in col. 1, lines 50-55 that his auxiliary data channel with a capacity of 48,000 samples/s/32 subbands*16bits/subband=24kbit/s... Thus, comparing the capacity taught by Spille is more than adequate to the limitation "comprises at least 4 words".

Claim 31: The limitation "to facilitate identification of or synchronization" implies that the term "synchronization" may be more broadly interpreted to read upon the identification taught by Spille as noted above.

Remarks

12. The applicant's arguments as noted above contradict various elements of the specification and are therefore not convincing. Also, many claim elements are stated in the alternative. Therefore, some claims are rejected twice since they may be interpreted with or without certain alternative limitations.

The Examiner has read the specification carefully and strongly disagrees with the applicant's characterization of the invention as disclosed. The disclosure requires coding speech into subbands which may be analyzed according to well-known psychoacoustic rules to find one or more subbands in which auxiliary information may be carried in a manner that will not perceptibly alter any resulting decoding of the coded audio sent to a user (i.e. – someone who hears the resulting output) with the auxiliary data embedded in it. This is precisely what Spille teaches and the applicant has not explained how this basic teaching is different than the prior art.

Spille additionally teaches that it would be known to use auxiliary information for a variety of identification and/or dynamic control functions in col. 2 which have not been addressed. Thuse the proposal by Spille to use auxiliary information for a variety of purposes is an open invitation to look for improvements such as Ten Kate's teachings that includes control signals for purposes of synchronization at the receiver to improve decoding accuracy.

This Office Action is Non-Final because a preliminary amendment was not entered and various claims were not treated in the first Office Action. However, the applicant has received two Office Action so the case should be Appealed if the applicant wishes for the fastest possible prosecution.

13. Some correspondence may be submitted electronically. See the Office's Internet Web site http://www.uspto.gov for additional information.

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Effective 14 January 2005, except correspondence for Maintenance Fees, Deposit Accounts (see 37 CFR 1.25(c)(4)), and Licensing and Review)see 37 CFR 5.1(c) and 5.2(c)), please address correspondence delivered by other delivery services (i.e. – Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, etc.) as follows:

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Knepper whose telephone number is (571) 272-7607. The examiner can normally be reached on Monday-Thursday from 07:30 a.m.-6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (571) 272-7602.

For the Group 2600 receptionist or customer service call (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) between the hours of 6 a.m. and midnight Monday through Friday EST, or by email at ebc@uspto.gov. For general information about the PAIR system, see http://pair-direct.uspto.gov .

David D. Knepper
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Art Unit 2626
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May 24, 2006